Attachment

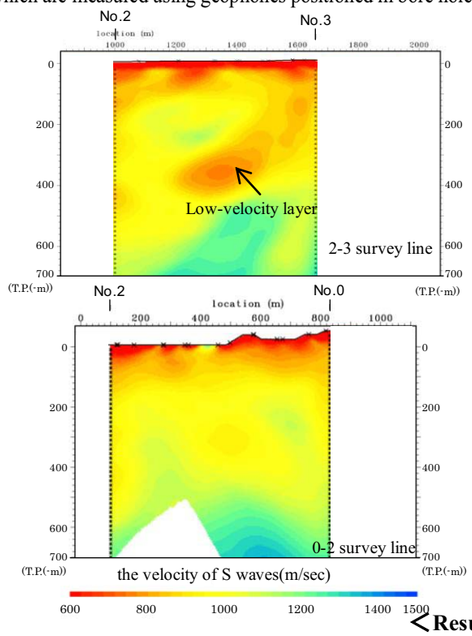
Results of Analysis of Factors producing Amplification of Vibration at Unit 5 during the Suruga Bay Earthquake

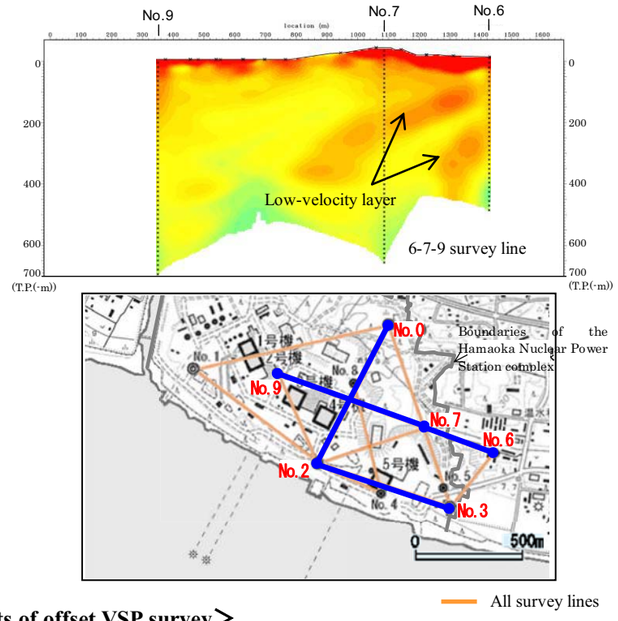
Based on the fact that seismographic records from the Suruga Bay Earthquake on August 11, 2009 show stronger vibration at Hamaoka Nuclear Power Station Unit 5 than is the case for other reactors, Chubu Electric Power has brought together the results of an analysis of factors producing amplification of vibration at Unit 5 based on study of the results of our own survey of underground structures underneath the facility and seismographic records (these results are termed “survey and analysis results” below). An overview of these results is presented below.

1 Study based on surveys of underground structures

Surveys of underground structures close to the grounds of the Hamaoka Nuclear Power Station were conducted using methods including VSP*1. The results of these surveys showed an underground structure running in a northeasterly direction from Unit5 at a shallow level in which the velocity of S waves was noticeably lower than in surrounding areas (termed the “low-velocity layer” below). No similar low-velocity layers were observed in any locations other than the vicinity of Unit 5.

*1 A method of surveying underground structures by generating elastic waves at the ground surface using a seismic vibrator or similar device, which are measured using geophones positioned in bore holes

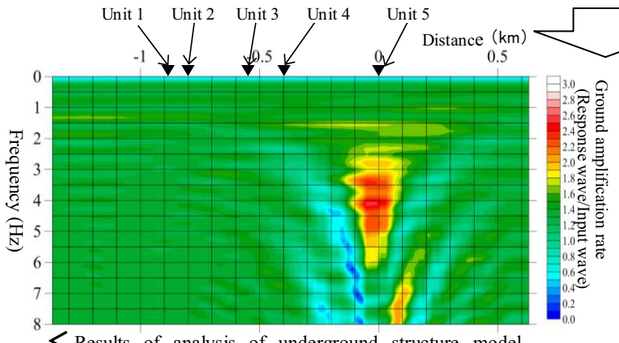




All survey lines

Published survey lines

＜Results of offset VSP survey＞



＜Results of analysis of underground structure model reflecting low-velocity layer※2＞

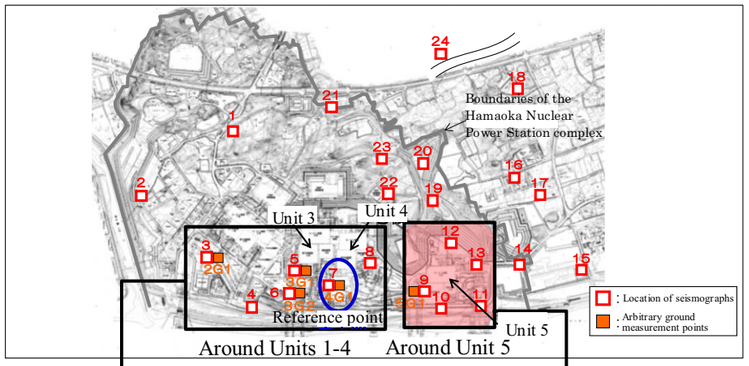
Using an underground structure model reflecting the low-velocity layer, an analysis of ground motion waves in the direction of arrival of ground motion from the Suruga Bay Earthquake was conducted. The results of this analysis indicated that the effect of the low-velocity layer would increase the ground amplification rate around Unit 5, but would produce no effect around Units 1-4.

*2 Shows the ground amplification rate on the bedrock in cross-sections of Units 1-5

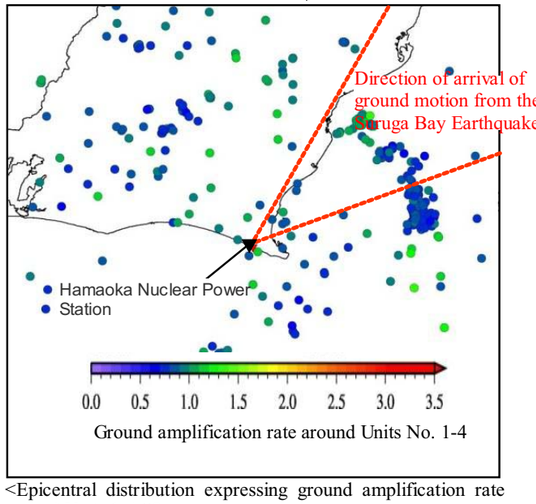
2 Study based on seismographic observations

Seismographic observations of the entire grounds of Hamaoka Nuclear Power Station are conducted using large numbers of seismographs. Using the seismographic records obtained from these observations, a study of the vibration tendency of the ground around Unit 5 and around Units 1-4 to vibrate in relation to a reference point located almost exactly in the center of the facility grounds (termed the “ground amplification rate” below) was conducted.

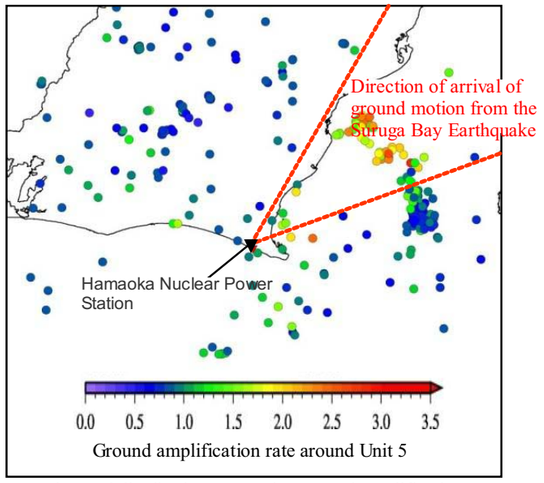
The results of this study indicated that the conspicuous amplification of vibration observed around Unit 5 was limited to earthquakes with the same direction of arrival of motion as the Suruga Bay Earthquake, while in the case of the area around Units 1-4, no conspicuous amplification of vibration was observed for earthquakes from any direction of arrival of ground motion.。



＜Diagram of arrangement of seismographs＞



<Epicentral distribution expressing ground amplification rate around Units 1-4 *3>



<Epicentral distribution expressing ground amplification rate around Unit 5>

*3 The plotted points show the relationship between the position of earthquake epicenters and ground amplification rate. The ground amplification rate is high in the areas colored from yellow through orange to red, and low in the areas colored from blue to green.

3 Results of analysis of factors producing amplification of vibration around Unit 5

The survey and analysis results demonstrated the following:

- The main factor producing amplification of vibration at Unit 5 is a low-velocity layer distributed at a shallow level in a northeasterly direction extending from the reactor.
- This low-velocity layer is not distributed in any location other than around Unit 5.
- Seismographic records show that the amplification of vibration observed at Unit 5 is limited to earthquakes with the same direction of arrival of ground motion as the Suruga Bay Earthquake, and that there was no conspicuous amplification of vibration at any observation points other than those around Unit 5.